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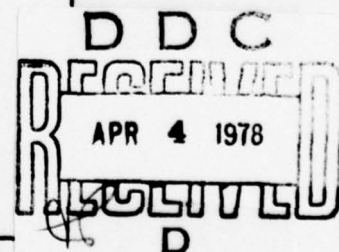DEPARTMENT OF DEFENSE · SYSTEMS MANAGEMENT COLLEGE · DOCTUS DOCTRINA DOMINATO

PROGRAM MANAGEMENT COURSE

INDIVIDUAL STUDY PROGRAM

THE ARMY MATERIEL DEVELOPER'S PROJECT MANAGER
AND THE COMBAT DEVELOPER'S SYSTEM MANAGER:
AN EVALUATION

STUDY PROJECT REPORT
PMC 77-2

Bobby R. Huggins
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STUDY TITLE: The Army Materiel Developer's Project Manager
and The Combat Developer's System Manager:
An Evaluation

STUDY PROJECT GOALS: To identify, define and evaluate user responsibilities
in the materiel acquisition process and develop a
procedure whereby these responsibilities could be co-
ordinated and controlled by the designated Project
Manager.

STUDY REPORT ABSTRACT: This report describes the authority and responsibility
of both the Project Manager (PM) and the TRADOC SYSTEM MANAGER (TSM)
to determine how these two managers should interface and likely pro-
blems which can develop. The report concludes that the TSM concept
is valid and if implemented in such a manner that the PM can still
control his system, will improve the materiel acquisition process.

The study concludes with a list of recommendations
which can serve as areas for more detailed study and policy develop-
ment. It is expected that this report can be useful to both the
materiel and combat development communities.

SUBJECT DESCRIPTORS: TRADOC System Manager; Materiel Developer;
Total System Development; Combat Developer

NAME, RANK, SERVICE	CLASS	DATE
Bobby R. Huggins, LTC (P), USA	PMC 77-2	1 November 1977

THE ARMY MATERIEL DEVELOPER'S PROJECT MANAGER

AND THE COMBAT DEVELOPER'S SYSTEM MANAGER:

AN EVALUATION

Individual Study Program

Study Project Report

Prepared as a Formal Report

Defense Systems Management College

Program Management Course

Class 77-2

by

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November 1977

Study Project Advisor
LTC Richard Skowronek, USA

EXECUTIVE SUMMARY

The purpose of this report is to evaluate the Army materiel acquisition process to determine if the new TRADOC System Manager (TSM) is required and if so, what specific functions he should perform. The report utilizes information from draft literature and interviews with PMs and TSMs to develop the TSM's duties, how he should interface with the PM, and likely problems which can develop.

The study concludes with a list of recommendations which can serve as areas for more detailed study and policy development. The major recommendation is that the TSM concept be adopted for all major acquisition programs but that the implementation be structured in such a manner that it will not provide grounds for DOD and Congress to conclude that the Army has two PMs for each major program. One further recommendation is that the TSM be identified as early as possible, well before Milestone I, and that he and the PM devise a procedure whereby the user provides inputs to the design process which lowers life cycle cost.

It is expected that this report can be useful to both the materiel and combat development communities. This report can also serve as the basis for a new evaluation in this area after the TSM concept has been fully implemented and experience is gained.

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SECTION I

INTRODUCTION

General

Over the past several years, there has been a noticeable trend in the total Defense Budget toward diminishing constant dollars, increasing personnel cost and less procurement of equipment. This situation has forced the Department of Defense (DOD) to realize they will not have the resources to continue to do business as they have in the past. It is now evident that all research, development and acquisition of equipment and associated cost of ownership of that equipment or system, must be better managed if the nation is to afford to continue to defend itself.

In recent years, primarily since the early 1970's when Mr. Packard was the Deputy Secretary of Defense, DOD has progressively tightened the materiel acquisition process for major programs. The present DOD Directives (DODD 5000.1 and 5000.2) which provide the broad policy in this area have recently been republished and now place even more stringent rules on the services than in the past. The current major emphasis is toward total system procurement, with the complete life cycle cost considered throughout the process. These new rules require that the services tie all the elements; development, procurement, personnel, training and all other logistic support requirements associated with a new system into a package, then determine the total cost associated with that system before a decision is made to continue with the program. In other words, DOD is insisting that the services do a better job of determining what they need and then developing and deploying a complete system which can do the job and which can be afforded.

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Throughout the period since the late 1940's the Army, like its sister services, has used the Project Manager (PM) concept in developing high priority or urgently needed items of equipment or systems. This procurement scheme placed emphasis on managing development and procurement at the front end of the materiel acquisition process. The track record shows unequivocally that the PM approach has improved some aspects of the acquisition process and in most instances, it has been successful in providing the hardware so vital to a sophisticated fighting force. However, all too often, this approach has allowed incomplete products to be delivered which could not perform up to expectation, were fielded much later than desired or increased the already troubled operating and support cost more than necessary.

The current trends toward more complex technology, when coupled with the increased emphasis on total system development, shorter development time and lower life cycle cost has caused the Army to conclude that the PM needs help if the job is to be accomplished effectively. In short, the Army must develop a complete materiel acquisition process which effectively integrates the U.S. Army Materiel Development and Readiness Command's (DARCOM) materiel development function and the U.S. Army Training and Doctrine Command's (TRADOC) combat developer/user function.

In January, 1977, the Army took action to provide the PM with at least some of the help he needs to tie the system together. They initiated the TRADOC System Manager (TSM) program. This new concept is an attempt by the Army to insure that not just the equipment but a complete system which can satisfy the current need is fielded in the shortest possible time and at the least possible cost.

Purpose of the Study Project

The purpose of this study project, in addition to expanding the author's knowledge of a complete materiel acquisition system, is to analyze the new TSM concept. The PM and TSM interface and the problems which this marriage can produce will be the specific area of concentration. The study is not intended to focus on any one specific project or program but instead, will attempt to address broad functions which these two managers must perform while developing and deploying a major weapon system.

The study will be based upon the author's past experience as the staff officer responsible to oversee the development of the SAFEGUARD training program, draft documentation on the new TSM concept, and interviews with PMs and TSMs now operating in the field. The general conclusions offered in this study can serve as the basis for more detailed studies in specific areas which will result in an improved Army materiel acquisition management system.

Research Methods Used

The conceptual ideas and data contained in this study came from the author's prior experience on a PM's staff and the search of literature relating to this study area. A significant amount of the current thinking on this subject came from seven PMs, six TSMs and staff officers at HQ DA, DARCOM, PM offices and TSM offices. The personal and telephonic interviews conducted with these individuals utilized the non-attribution policy so the specific sources of comments relating to the current situation obtained during these interviews will not be disclosed. The outline by which these interviews were conducted is at Appendix A.

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Organization of the Report

This study report is organized into sections based upon the primary subjects addressed. The section on the PM describes how the project manager system has been working and identifies the major shortcomings inherent in this concept. In the section on the TSM, the primary thrust is toward identifying what functions this individual should be expected to perform and how he should interface with the PM. The TSM concept is new; it is so new, in fact, that firm policy governing this position has not been established. As a result, the discussion in this section is based upon opinions and concepts more than proven experience.

The remaining three sections of the report compare the proven PM program with the unproven TSM concept and ultimately draw some broad conclusions and recommendations. The major purpose of this portion of the report is to identify problems before they occur and make broad recommendations upon which to base future detailed studies and firm policies.

SECTION II

PROJECT MANAGER

Concept

The DOD Materiel Acquisition Policy is that all major weapon systems will be developed and acquired by a responsible manager under the PM concept. (10/5)[1] In the Army, the PM concept is based upon vesting in a single individual the sole line authority for planning, directing, control of tasks, and associated resources involved in the research, development, testing, initial procurement, production and fielding of a weapon/equipment system. The Army PM is also responsible for assuring that project related planning is accomplished and executed by all functional organizations involved with his program.

Authority and Responsibility

The DOD and Army materiel acquisition policies are clear on this subject; they hold the PM responsible for insuring that a system is developed, procured and delivered to the using organizations within approved performance, schedule and cost parameters. This responsibility extends into every aspect of the particular program and includes not only the equipment which is to be produced, but the support packages as well. He must insure that a complete system is developed and delivered.

The Army policy states that when a PM is appointed for major programs, he will be given a charter approved by the Secretary of the Army (SA) which

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[1] This notation will be used throughout the report for sources of quotations and major references. The first number is the source listed in the bibliography. The second number is the page in the reference.

prescribes the project manager's responsibility, authority, and accountability for program objectives achievement. The charter will also define the line of authority and reporting channels between the PM and the SA. The policy also authorizes the PM to utilize a direct channel of communication to the SA or lower levels in the line of authority, as appropriate, to insure that supporting organizations respond to the program requirements as needed. (8-8)

The PM charter is not exactly the same from project to project because the charters must recognize that programs are different and each requires its own tailored management policies. However, most major system charters assign about the same authority and responsibility to the PM as those found in the DARCOM charter for the XM 1 Tank. The broad authority and responsibility contained in that charter follows:

-Planning, directing, and controlling the allocation and utilization of all resources authorized for execution of the approved project.

-Defining, developing, procuring, producing, distributing, and integrating logistic support to accomplish project objectives.

-Achieving the technical performance objectives of the project on schedule and at the lowest practical cost.

-Practicing trade-offs between system capability, cost and schedule within the bands of performance and thresholds established by the Decision Coordinating paper (DCP) or the Army Program Memorandum (APM). Trade-off decisions will give full consideration to the effect on system support effectiveness and integrated logistics support resource elements.

-Assuring that total program planning is accomplished and that the execution of the project conforms to the plan. This includes implementation

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by the organizations responsible for the complementary functions of integrated logistic support, product assurance and operational testing, and activation of deployment of the system and its related equipment. (4/A1-A2)

In short, the PM is held accountable for his system, even though he must rely on others to do the work. He cannot escape the ultimate responsibility for the results. He must be satisfied that what is done in his program makes sense to him and is consistent with his program plans. If he is not pleased with progress in any particular element, he must have the authority to direct that it change and be brought into line with the overall plan. (3/4-5)

Problems

In today's total system package, there are four broad subsystems which must be integrated and developed in parallel. These subsystems are: hardware and doctrine, logistics, personnel and training. (5/A-1-9) The first of these, hardware, has been receiving most of the attention and with some noted exceptions, have been fairly well managed. The last three, logistics, personnel and training, which are in the main TRADOC responsibilities, have been poorly managed for many new systems. (5/A-1-9 to A-1-14)

The lack of a complete system package for proper testing and validation during the full scale development phase has caused problems. The system must either enter limited production and have additional development and operational testing during the production phase or be delayed until the support packages are ready. The DRAGON system is a good example where the Army let a system go through operational test (OT) and development test (DT) without a logistics support package and with improperly trained

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personnel. This condition, which has been all too common in the past, cannot be allowed to continue because it delays schedules and increases costs unnecessarily. It must be noted that during the course of this study, it was determined that the Army still has systems which will undergo DT/OT without a complete maintenance and training plan. The Army still has a problem which must be solved.

Still another major problem area which is becoming more critical now that greater emphasis is being placed on life cycle cost is how much impact the system design engineer has on cost. The big cost items; training, maintenance and manpower must be considered early and continuely refined throughout the acquisition process. The PM has not been extremely successful in this area in most programs. All too often, he has put emphasis on the lowest cost production model and then brought the trainer and logistician into the program after the system design was set. This situation means that not only are the operating and support (O & S) cost drivers not considered in the early design phase, but that the integrated logistics support (ILS) packages are started late. These packages are not ready for validation with the rest of the equipment at OT II as they must be. (5/A-1-12) Some of the PMs interviewed stated that they are beginning to go to the user and get experienced operator personnel to work with the contract design engineers. These efforts have paid dividends in some of the systems where they have been used because the engineer can now see, from the operator's point of view, what causes problems in the field and correct it very early while it is least expensive to do so. It has been estimated that as much as 70% of the life cycle cost of a system is set during the early design stage before Milestone I. It has also been determined that

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a change in the design of the equipment, made after the basic design has been set, can cost up to seven times as much as if it was performed in the early design phase. Under the new life cycle cost concept, the PM must insure that the design engineer is provided the best cost impact data, based upon user inputs, as early in the program as possible.

SECTION III

THE TRADOC SYSTEM MANAGER

Concept

Many of the current major problems in the materiel acquisition process
center around the ILS functions which, in most instances, are developed and
integrated by the functional organizations within TRADOC. This is a large
task and one which the PM has been, and still is, responsible for. In
many instances in the past, he concentrated on the development of equipment
and the development of ILS packages and other support was not started early
enough in the program. The PM dealt with many functional areas, all too
many of which were not responsive to his needs.

TRADOC, in an effort to achieve a shorter development cycle and reduce
life cycle costs, developed an in-house coordinator, the TSM. This indivi-
dual, an experienced Army Colonel, is expected to be appointed early in the
development cycle. He is the user representative who will help the PM in-
sure that the total system, with all the necessary support functions, is
being developed.

In TRADOC, the Army organization which has been assigned the user/com-
bat developer role, there are many widely dispersed organizational elements
which have functional responsibility for segments of the combat development
mission. The primary development centers involved in this role are: The
Combined Arms Combat Development Activity, Fort Leavenworth; The Logistics
Center, Fort Lee; The Administration Center, Fort Benjamin Harrison; The
service schools such as The Armor School, Fort Knox; The Field Artillery
School, Fort Sill; The Infantry School, Fort Benning, and others. Also

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included in this process are the TRADOC test boards associated with the service schools. This organization, which concentrated the combat development expertise in one location, allows maximum proficiency in that functional area; however, this geographic isolation contributes to integration difficulty. It is this overall integration task which the TSM is expected to perform. He must insure that all of the combat development tasks are pulled together and integrated, not only between themselves, but also into the hardware which the PM is developing.

Authority and Responsibility

Even though the TSM concept is new and the policies which will govern his actions have not been fully developed, the Army has accepted the basic concept and has taken steps to implement the program. The draft literature at both the Department of the Army (DA) and TRADOC address the position and consider the authority and responsibility which this manager should have. The first twenty-four TSMs have been assigned and another five are planned to begin operating in the near future.

The TSM will derive his formal authority and responsibility from a charter which will be similar to the PMs, with the exception that it will be approved by the Commanding General (CG), TRADOC, and not the SA as is the case with the PMs. The new TSMs are in the process of preparing their charters and at present, eight have been approved. The draft TSM charter, which was prepared by TRADOC as a guide for the new TSM, is at Appendix B. This document, in effect, makes the TSM another PM for all activity concerning his program within TRADOC, and even extends his responsibility and authority to act for the CG, TRADOC, with outside agencies such as:

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HQDA, DARCOM, OTEA, MACOM, MILPERCEN, other services and DOD and Congress, when directed. The internal PM type TSM responsibilities within TRADOC are unquestioned and all PMs interviewed during this study highly endorse this concept, but the type and amount of authority and responsibility which the TSM should have outside TRADOC is unclear.

The primary reason for this unclear condition centers around the dual responsibilities which they must satisfy, that of the combat developer/user and developer for many of the ILS packages which are required for the complete system. Even though it appears that there is no major problem in this area at the present time, this study will analyze the TSM's authority and responsibility as it pertains to these two broad responsibilities.

Combat Developer/User

The TSM must have the authority and responsibility to insure that the combat development functions such as threat analysis, need determination, and new doctrine/tactics which pertain to his system are developed and integrated into his system. Much of this work is performed during the conceptual phase, long before the PM or the TSM is appointed, and serves as the basis for the Letter of Agreement (LOA) and later, the Required Operational Capability (ROC). However, the TSM must insure that the functional elements within TRADOC and at HQDA continue their work throughout the acquisition phase. If it should be determined that the system, as specified in the LOA/ROC, is not needed or the essential operating parameters have changed, the TSM must have the authority and responsibility to report these findings to the CG, TRADOC, HQDA, and ultimately to the SA or the SECDEF for a decision. This action is consistent with the con-

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tractual arrangement between the combat developer/user and the materiel developer. The user determines that he needs a new system to meet a specific threat and then contracts with the materiel developer to have the system built. He must provide the materiel developer, the PM, with three vital pieces of information which form the basis of their contract. These guides are: the selected essential operating parameters (performance), when the system is needed (schedule), and how much he is willing to pay for the system (cost). The user must stand ready to defend not only the need for the system but also, the development guidelines which he has provided to the materiel developer. Most of the PMs interviewed during this study endorsed the idea that the TSM should be the individual to defend the need for the system at all levels, even Congress, if required. The only PMs who did not fully support this idea did so because they felt that when the PM is a general officer and the TSM is not, the PM's greater rank would make the defense easier. Even in these instances, it was envisioned that the TSM would be present and support the PM during the defense.

Support Package Developer

As long as the contract between the user and the materiel developer, the LOA/ROC, is valid then all effort must be directed toward meeting the goals established therein. This then forms the foundation upon which the PM works and he must coordinate all effort toward and be held accountable for meeting the terms of the contract. The TSM then must work with the PM, serving as his integrater for all TRADOC functional areas. This, incidentally, is the mission which most TSMs interviewed feel is their primary responsibility and the one where they will spend most of their effort.

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In this particular part of his duties, the TSM is much like any other PM, he must coordinate and insure performance of all actions which the internal TRADOC functional organizations must accomplish in order to produce a complete system. For these functional areas, the PM should determine what is to be done and then allow the TSM to establish the how it will be done. The PM will provide the broad parameters such as what functions must be performed and the schedule by which they must be accomplished. He must insure that the required resources are provided (training devices, publications, test equipment, personnel skills required and others), then he leaves the TSM alone to get the job done. The PM and the TSM must have agreed upon milestones much like the PM should have, with all other functional areas associated with his program. These milestones must be tailored so that the TRADOC support packages are completed and ready for validation along with the rest of the system. The TSM's authority and responsibility for internal integration must be strong enough to allow him to pull the strings required to get his part of the complete system done for the PM. It should be noted that the PMs and TSMs interviewed basicly agree with the above functions, however, since the TSMs are new and they are entering projects which have been going for some time, it has not worked this way so far. It is expected that new programs which start with both a PM and TSM in the early phases will operate generally as described above.

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SECTION IV

COORDINATION REQUIREMENTS

During Concept Development

The actual coordination requirement between the material and the combat developer starts long before either a PM or a TSM is appointed. The requirements start with the Mission Element Need Statement (MENS) which is expected to be prepared by TRADOC in coordination with DARCOM. Once this document is approved by the SECDEF, a program is initiated and either a Special Task Force (STF) or a Special Study Group (SSG) is established. During this period, which is the concept phase in the development cycle, it is Army policy that the chairman of the STF represent TRADOC and the deputy be the PM designee. The current literature does not address the TSM during this period, but one of the TSMs interviewed stated that he thought it would be wise to bring him on board along with the PM designee.

The STF explores and identifies alternative system concepts, assists TRADOC in preparing the initial cost and effectiveness analysis (COEA) and the all important LOA. This group also assists DARCOM in preparing an outline acquisition plan which will support the LOA and the Decision Coordination Paper (DCP). The DCP is the foundation document upon which the validation decision (Milestone I) is based.

The work performed during this phase of the acquisition cycle is vital to the entire development of the system because it is during this phase that the one key document, the LOA is prepared. This is the contract between the user and the developer. It is the foundation upon which the PM will operate and can spell success or failure to a program. The LOA must, by its very nature, be broad but it must be definitive enough so the PM and when appointed

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the TSM can start to obtain data not only on the equipment but on the people, training, and logistics support concepts and requirements as well.

After Validation Decision

Under current Army policy, the PM is appointed at or about Milestone I and it is expected that the TSM will also be selected about the same time for all future major systems. The two managers must begin coordination as early as possible during this phase if the total system concept is to work properly. This is the period when the developers start to look at alternative solutions to the technical problem, and in many instances, prototypes are developed and tested. There are some members in the acquisition community who state that this is too late to start work on the support packages because the design decisions which have already been made dictate the support required rather than the other way around. (5/A-1-11 to A-1-14) However, if he has not already done so, the TSM must consider the training concepts, operator personnel requirements and at least a desired logistical support concept if he expects to have these elements tested at OT/DT I. It is realized that these will not be complete packages but they must be complete enough to begin to evaluate the approach which will be taken in the later development phases.

The TSM and the PM must also tailor an agreement which will allow the user to imput his information into the design so that the cost drivers are considered and the important ILS packages; logistics support, personnel and training are developed in parallel with the other parts of the system. This user input may range all the way from informal review and comment on design concepts to stationing user representatives at the contractor's facility. It depends on the system under development and the amount of data the PM and

TSM agree is needed. One PM even went so far that he sent a prototype system out to a unit and allowed them to operate and train with the equipment one year before initial operational capability (IOC). This allowed him to receive, analyze and incorporate the users recommendations into the system and lower the cost. The important issue is not how it is done but that it is done and it is under the control of the PM. No program can have two PMs. The issue of who will have final decisions on critical program problems such as engineering change proposals (ECP), system trade-offs, contracts, and other like areas must be reserved for the PM as long as he is meeting the terms of his contract.

The user/materiel developer relationship during the design stage can be very critical. It really depends on how well the user defined what he wanted in the initial contract. If the user specified all the parameters of the system, to include the personnel, training, logistic support concept desired and all others which he wants considered, there would be no problem. However, all too often in the past, the user did not know what he wanted and as a result, changed his mind throughout the development cycle or he sat back and received a system which he did not want. The TSM and the PM will be forced to work closely to insure that the user inputs are considered and incorporated to the degree that they lower life cycle cost and those which would only add unnecessary performance at the expense of cost and schedule are rejected.

As the system progresses through the development cycle, the coordination requirements become even more critical. The PM must insure that the equipment is ready but under the current concept, this is not good enough. He must also insure that all other agencies' support packages are ready. The entire ILS package, to include the maintenance plan, the logistics support

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system, the training package, people, facilities, and the test plan itself must be ready if a valid test is to be conducted. The TSM will be a great asset here because most of the critical ILS elements which must be tested are his responsibility. TRADOC is also responsible for the development of standard scenarios and combat developer oriented/user test which they should provide to the independent tester, the U.S. Army Operational Test and Evaluation Agency (OTEA). These test related functions have been neglected and largely left up to the independent tester in the past. Of course, the TSM's functions are not complete after OT/DT II. He must insure that the ILS packages are completed and ready to support the production decision. One PM stated that he has had problems even after the production decision. He could not complete the contract because the user did not know how many items he wanted produced. It is envisioned that the TSM is there to help solve just this type problem.

SECTION V

POTENTIAL PROBLEM AREAS

A potential major problem area which developed during this study centers around the impression that the Army is installing a second PM in their major systems acquisition process. It was stated that DOD and Congress have bought the old tried PM procurement concept and they should not be given the opportunity to perceive that the Army has given part of the PM's power and responsibility to a second manager. The PM must still be responsible for his system and the TSM should in no way diminish his responsibility and authority.

A minor problem which developed is how the user inputs into the system design should be accomplished. There does not appear to be one best answer to this problem which would apply to all situations and systems. It appears that the PM and the TSM will be required to work this out on a case by case basis. However, it was determined that the need for this requirement is real and it must be accomplished if the life cycle cost is to be controlled. The study did not reveal that this is a major problem at present, but it did reveal that the best way to handle it was to identify as early as possible and in as much detail as possible what the user wanted and include it in the contract. We have a few systems where this has been done in the last few years and it has resulted in a much better and lower cost product.

Still another area which is a problem in the present system, but which the new TSM concept has the potential to help solve is the stabilization of the user's requirements. The TSM could help with this problem because he should be a source of resistance to change within the user organization. If the TSM can hold the line and limit the user's non-essential changes, he can

be a major asset to the PM and vastly improve the Army materiel acquisition process.

CONCLUSIONS AND RECOMMENDATIONS

Conclusions

. The TSM concept is supported by the Army Materiel acquisition com-
munity; however, it may not be supported in DOD and Congress if these
organizations perceive that the TSM has been given part of the PM's
authority and responsibility.

. The TSM should defend the need for the system and the cost, schedule
and performance requirements in the ROC/LOA. Exceptions to this policy
might be warranted on a case by case basis when the PM's rank (general
officer) outweighs the TSM's.

. The user has not properly considered the O & S cost for a system fielded
in the past. The PM should keep the TSM fully informed on the program so
he can evaluate the life cycle cost consequences associated with trade-
off decisions. The user will be required to pay the bill for this sys-
tem for many years after it is fielded and he should have a say about
how big that bill will be. This process also should have a bonus
effect because the TSM can serve as a point of resistance to change in
the user community if he has full knowledge about his system.

. Milestone I appears to be too late to appoint the TSM because much of
the early design or concept formulation has been accomplished. He
should be in the program early to insure that the cost drivers are pro-
perly considered during the early design period.

. The PMs do not generally have a procedure whereby the user can provide
input into the system design early and in a cost effective way. The
PM and TSM must develop a procedure whereby the user inputs, which can

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impact design and ultimately life cycle cost, are considered early

and continuously throughout the development process.

. Development of the major supoort packages for which TRADOC is respon-

sible (training, maintenance and personnel) has not been adequate to

support the total system development concept. The TSM program should

remedy this situation. This new manager must insure that his packages

are ready and tested along with the equipment.

Recommendations

. That the TSM Concept be implemented for all major systems, but that it be tailored so that DOD and Congress will not be given the impression that the PM's authority and responsibility have been eroded.

. Appoint the TSM early. Consider assigning him as a member of the STF/SSG much in the same manner as is now done with the PM designee.

. That the PM and the TSM develop a procedure to allow user inputs into the design of the system. The TSM should be required to support recommendations for change with sound life cycle cost data before the PM allows the change.

. DA policy should require that the TSM defend the need for the system at all levels, and that exceptions to this policy be granted on a case by case basis.

. That the PM require the TSM to develop a management system by which all TRADOC functional organizations working on the same program are controlled and by which the PM is kept informed on the progress and major problems in each area.

. That the TSM be included in all major system reviews, meetings, and discussion as required to keep him informed on the development of the total system.

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INTERVIEW QUESTIONS

APPENDIX A

The questions contained in this appendix were used to gather data to sup-
port this study project. In many instances, the conversations which these
questions initiated were much broader than these questions would imply.

INTERVIEW QUESTIONS FOR PM

1. What is your view of the NEW TSM CONCEPT?

2. What functions do you envision that the TSM will perform in your
    program? (Training, log support planning, personnel, test, PPBS, Eng
    Change Proposals, and other)

3. How are you communicating with the TSM: (Meetings, reports, in person,
    phone?) How often and to what degree do you expect to keep him informed
    on your program?

4. What responsibility and authority do you expect the TSM to have?
    A. Internal TRADOC   B. External, other units or organizations outside
    TRADOC

5. How and to what degree have you considered user inputs (comments/evalua-
    tions) in the design and development of your system? (Do you expect the
    TSM to be a help in this area?)

6. Do you expect the TSM to defend the need for your system? (At HQ DA in
    the ASARC), (DOD in the DSARC), (Before Congress)

7. Do you see any problems with the TSM Concept?

INTERVIEW QUESTIONS FOR TSM

1. How long has your TSM Office been operating?

2. Do you have a charter? Has it been approved?

3. What project related authority and responsibility does your charter grant you? (A. Internal to TRADOC) (B. With organizations external to TRADOC)

4. Have you, or do you expect to be the individual to defend the need for your system? (At what level: DA, DOD, and Congress)

5. What is your relationship and how do you communicate with the PM for your project: (Meetings, reports, in person, phone?) Does the PM keep you posted on what is happening in your program?

6. What resources do you expect the PM to provide TRADOC? (Training equipment, contractor training, QQPRI, publications, facilities, and other)

7. How do you expect to input user information and/or changes into your program, particularly for those elements (equipment changes) which are being developed by the PM or other agencies outside TRADOC?

8. Do you foresee any problems with the PM/TSM Concept on your project?

TRADOC SYSTEM MANAGER (TSM) CHARTER

APPENDIX B

The TSM Charter contained in this appendix is taken from the DRAFT

TRADOC Workbook, "Total System Management", published 3 May 77.

TRADOC SYSTEM MANAGER'S SKELETON CHARTER

The following is the approved TSM skeleton charter and is the primary guideline for establishing specific TSM charters.

a. <u>DESIGNATION OF TRADOC SYSTEM MANAGER</u> (TSM):

Colonel (name & SSN) is designated TRADOC System Manager for "X" system. He will report to the CDR TRADOC through the (center/school) commander. This is the initial TRADOC System Manager Charter for the "X" system. This charter will be reviewed annually on its anniversary date by the TSM to insure currency and adequacy. Proposed revisions to this charter will be submitted to HQ TRADOC, ATTN: ATCD-PM, for approval.

b. <u>MISSION</u>:

The TSM is responsible for total system management for the "X" system within TRADOC. He will insure that the user total system efforts are developed and fully integrated early and continuously throughout the development cycle.

c. <u>AUTHORITY AND RESPONSIBILITY</u>:

(1) AUTHORITY. The TSM, acting for the school commandant and the Commander, TRADOC, will discharge the user's responsibilities in the development, testing, training, and in coordination with the gaining command, fielding of the "X" system. He has tasking authority, in coordination with HQ TRADOC, to all TRADOC elements.

(2) RESPONSIBILITIES. The TSM is responsible for:

(a) All user actions as delineated in appropriate Army and TRADOC regulations and amplified in DAP 11-25. In particular, the TSM will insure that plans for training, personnel, logistics and new doctrine/

tactics are timely and fully integrated into the materiel development program.

(b) Primary user interface with the PM, "X" system.

(c) Supervising and/or participating in the preparation and/or revision of appropriate materiel requirements documentation, development plans (training, personnel and logistics) and testing plans.

(d) Coordinating user evaluation of all Equipment Performance Reports (EPR) and subsequent proposals for changes to the "X" system and their relative priorities.

(e) Insuring the compatibility with user requirements of all engineering change proposals (ECP) and other vendor or PM, "X" system trade-off proposals.

(f) Participating in the contractual actions of the PM, "X" system to insure compatibility with user requirements.

(g) Preparing the TRADOC position and participating in all decision reviews (IPR/ASARC/DSARC) for the "X" system.

(h) Primary user representation in all studies, evaluation, and other efforts supporting development of the "X" system.

(i) Defending system requirements at all levels of the DOD and of Congress as directed.

(j) Acting as chairman or co-chairman of all established "X" system TRADOC/DARCOM JWGS.

(k) Insuring development of training literature, including crew and unit evaluation documents, needed to support the "X" system in the field.

(l) Insuring development of training standardization for the "X" system.

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(m) Insuring that reports in the progress of the "X" system are provided as required by this charter, and notifying the proponent center/school commander and the Commander, TRADOC when it appears that any approved program threshold has been or is forecast to be breached.

   d. <u>INTERFACE AND PARTICIPATING ORGANIZATIONS</u>:

   (1) INTERFACE ORGANIZATIONS. The TSM is authorized to coordinate directly with the following organizations on matters relating to the "X" system.

   HQDA

   HQ TRADOC

   USADARCOM PM & MSC

   USAOTEA

   USAMACOM

   CDRMILPERCEN

   Other services as required.

   (2) PARTICIPATING ORGANIZATIONS. TRADOC schools, integrating centers test organizations and activities, and other activities will provide support to the TSM in accordance with TRADOC regulations, directives and policy/procedure documents, and as tasked under provisions of this charter.

   e. <u>RESOURCE CONTROL</u>:

   Army resources to accomplish the above responsibilities will be provided directly to the TSM by HQ TRADOC using existing funding channels and procedures.

   f. <u>COMMUNICATIONS CHANNELS</u>:

   (1) The TSM is authorized to exchange direct communications on matters relating to the "X" system with all interfacing and participating

organizations.

(2) The TSM has a direct channel of communication to the CG, TRADOC should any of the organizations fail to respond to system requirements in any of the several management areas. The TSM is authorized direct communication with all participants to assure timely and effective direction and exchange of information. Prior to communicating with the CG, TRADOC, the TSM will apprise the proponent commander/commandant, center/school, of the communication to insure coordination and assistance.

g. LOCATION AND SUPPORT:

The TSM office is established at the (name of proponent center/school) with necessary facilities and administrative support provided by that organization. Staffing for the TSM office is one 06, one 05, two 04, and one civilian clerk-typist with qualifications and skills determined by the proponent center/school commander. Additional staffing and support will be provided as directed by the proponent center/school commander.

h. REPORTING:

(1) MILESTONES. The TSM will submit a milestone schedule within 30 days after approval of this charter, to include a preliminary status/assessment of the "X" system, and thereafter provide revisions as required reflecting:

(a) The TRADOC System Manager's Office status.

(b) A Schedule of the significant user events remaining throughout the development cycle. This schedule must be compatible with the Master Milestone Schedule for "X" system and the Life Cycle System Management Model.

(c) Recommendations for actions needed to expedite and improve the development and fielding of the "X" system.

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(2) REPORTS.

(a) An initial report will be submitted within 90 days of
office establishment through DCSCD, TRADOC to Commander, TRADOC. Reports
will contain the status of the "X" program.

(b) Subsequent reports will be submitted on an as needed basis.
Reports will contain an update of the program status, assess program progress,
and identify any problem areas or projected slippage of major actions which
affect the program.

(c) A final report will be submitted upon termination of the
system manager's office.

i. TERMINATION:

The TRADOC System Manager's office will be terminated when directed
by the Commander, TRADOC.